

REMARKS/ARGUMENTS

Reconsideration of the above-identified patent application in view of the following remarks is respectfully requested.

Applicants thank the Examiner for the informal Examiner's amendment to correct the informalities of claims 41 and 46. Although none of the claims have been amended by this Response, a Listing of the Claims is included to show the changes made to claims 41 and 46 by the informal Examiner's amendment.

It is respectfully acknowledged that claims 15-22, 27, 29-32, 40, and 41 were indicated as being allowed.

The Office Action rejected claims 43-45 as failing to comply with the written description requirement of 35 U.S.C. §112, first paragraph. Specifically, the rejection stated that it appears that the original specification does not support the dimensions recited in claims 43-48. This rejection is respectfully traversed.

Support for each of the claimed dimensions is given in the paragraph beginning on page 13 at line 12. Support for the dimensions of claim 43 (i.e., one half inch by one half inch) is provided at page 13, line 25 to page 14, line 5. Support for the dimensions of claim 44 (i.e., depth of up to ten millimeters) is provided on page 13, at lines 19-20. Support for the dimensions of claim 45 (i.e., diameter of up to 1.4 millimeters) is provided on page 13, at lines 12-20. Since each of the dimensions of claims 43-45 is supported by the original disclosure, the rejection of claim 43-45 under 35

U.S.C. §112, first paragraph is improper. Therefore, withdrawal of the rejection of claims 43-45 under 35 U.S.C. §112, first paragraph is respectfully requested.

Claim 1 stands rejected as being anticipated by Thorn, U.S. Patent No. 4,928,991. Thorn, however, fails to disclose a microelectromechanical system device (MEMS device) that is energizable to cause actuation of a protection device, as is recited in claim 1. Therefore, the rejection of claim 1 is respectfully traversed.

**I. MICROELECTROMECHANICAL SYSTEM (MEMS) HAS A SPECIFIC  
MEANING TO THOSE HAVING ORDINARY SKILL IN THE ART**

A word in a claim must be given its plain meaning unless specifically defined in the specification of the patent application. M.P.E.P. §2111.01. The plain meaning of a term is the meaning given to that term by those of ordinary skill in the art. M.P.E.P. §2111.01. Dictionaries, encyclopedias, and treatises may be used for helping to determine the plain meaning of the words of the claim. Texas Digital Systems, Inc. v. Telegenix, Inc., 308 F.3d 1193, 1202 (Fed. Cir. 2002).

In the Amendment filed March 24, 2003, "microelectromechanical systems (MEMS)" were defined as "integrated micro devices combining electrical and mechanical components that are fabricated using integrated circuit batch processing techniques." (citing "So what are these MEMS?, MEMS Overview from MCNC," at [www.people.cornell.edu/pages/akt1/what.html](http://www.people.cornell.edu/pages/akt1/what.html)).

A second definition of "microelectromechanical systems (MEMS)" is attached to this response. This second definition

defines "microelectromechanical systems (MEMS)" as "devices containing extremely small mechanical elements, which are usually integrated together with electronic processing circuitry. To define this type of mechanism, so small that one cannot distinguish them with the naked eye, we use the term of 'Nanotechnology' nano being a billionth of a meter." See, "What are MEMS" at [www.memsguide.com/WhatareMEMS.htm](http://www.memsguide.com/WhatareMEMS.htm).

These two definitions are completely consistent with one another and are helpful for determining the plain meaning of the term "microelectromechanical system device (MEMS device)" of claim 1 to one of ordinary skill in the art.

As previously set forth, one of ordinary skill in the art of vehicle occupant protection devices is familiar with microelectromechanical systems (MEMS). For example, one of ordinary skill in the art of vehicle occupant protection devices would be familiar with the microelectromechanical systems (MEMS) that are used in the devices for sensing the occurrence of a vehicle crash event that are disclosed in U.S. Patent Nos. 6,000,287, 6,028,343, and 6,149,190 (copies of which have previously been disclosed).

Thus, one of ordinary skill in the art would understand the term "microelectromechanical system device (MEMS device)" of claim 1 as having a particular meaning in the art. Moreover, one of ordinary skill in the art would understand the particular meaning of the term "microelectromechanical system device (MEMS device)" as being a device having a microelectromechanical system (MEMS), in which the microelectromechanical system (MEMS) results from combining

extremely small mechanical elements and electronic processing circuitry and to form an integrated structure that is so small that one cannot distinguish the integrated structure with the naked eye.

**II. THORN FAILS TO DISCLOSE A MICROELECTROMECHANICAL SYSTEM  
DEVICE (MEMS DEVICE)**

Thorn teaches an inflator assembly 10 that contains eight gas generating cartridges 12. Each of the eight gas generating cartridges 12 includes an electric igniter 18. A printed circuit board 24 electrically connects the electric igniters 18 to a power supply 20. (Thorn, Col. 2, lines 20-32).

The Office Action, in rejecting claim 1 as anticipated by Thorn, interprets the gas generating cartridges 12 of Thorn as the mechanical component and the printed circuit board 24 of Thorn as the electrical component that are combined to form a microelectromechanical system device (MEMS device). This interpretation of Thorn, however, completely ignores the plain meaning of the term "microelectromechanical system device (MEMS device)" to one of ordinary skill in the art.

Thorn fails to include extremely small mechanical elements that are combined with electronic processing circuitry to form an integrated device that is so small that one cannot distinguish the device with the naked eye. Webster's defines the term "distinguish" as meaning, "to recognize as being different or distinct." In Thorn, the eight gas generating cartridges 12 are not extremely small mechanical elements and are clearly distinguishable from one

another and from the printed circuit board 24. Thus, Thorn fails to disclose a microelectromechanical system device (MEMS device).

The Office Action further states that the microelectromechanical system device (MEMS device) of the present invention, if having a one-half inch by one-half inch base, as recited in claim 43, are no more "micro" than the gas generating cartridges 12 of Thorn. The Office Action, thus, concludes that if the devices of the present invention are microelectromechanical system devices (MEMS devices), then the combined structure of the gas generating cartridges 12 and the printed circuit board 24 of Thorn also forms a microelectromechanical system device (MEMS device).

To the contrary, as one of ordinary skill in the art would clearly discern from the disclosure of the present invention, each of the microelectromechanical system devices (MEMS devices) disclosed in the present invention includes a plurality of microelectromechanical systems (MEMS). With specific reference to the embodiment illustrated in Figs. 2-4, the microelectromechanical system device (MEMS device) includes nine microelectromechanical systems (MEMS), with each of the microelectromechanical systems (MEMS), for example, including a heating element 28, a plenum or propellant chamber 36, a body of solid propellant material 38, and a rupturable segment or diaphragm 42. In a one-half inch by one-half inch device, the nine microelectromechanical systems (MEMS) would have generally indistinguishable integrated structures of electrical and mechanical elements with the mechanical element

of each of the microelectromechanical systems (MEMS) being extremely small. Thus, the present invention clearly teaches a microelectromechanical system device (MEMS device) that is consistent with the plain meaning of the term "microelectromechanical system (MEMS)" given by one of ordinary skill in the art. Thorn, on the other hand, fails to disclose such a microelectromechanical system device (MEMS device). Since Thorn clearly fails to disclose a microelectromechanical system device (MEMS device) to cause actuation of a protection device, as is recited in claim 1, the rejection of claim 1 as anticipated by Thorn is improper and should be withdrawn. Thus, allowance of claim 1 is respectfully requested.

Claims 2-14 and claims 43-46 depend from claim 1 and are allowable for at least the same reasons as claim 1. Additionally, claims 2-14 and claims 43-46 are allowable for the specific limitations of each claim.

Specifically, claim 43 recites that the microelectromechanical system device (MEMS device) has a length of approximately one half of an inch and a width of approximately one half of an inch. Thorn fails to disclose this feature of claim 43. Therefore, the rejection of claim 43 as anticipated by Thorn is improper and should be withdrawn. Allowance of claim 43 is respectfully requested.

Claim 44 recites that the microelectromechanical system device (MEMS device) includes a plurality of plenums for storing an energizable fluid source. Claim 44 further recites that each of the plurality of plenums has a depth of up to ten

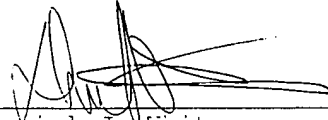
millimeters. Thorn fails to disclose these features of claim 44. Furthermore, one of ordinary skill in the art, given the disclosure of Thorn, would not find the propellant chambers of the gas generating cartridges 12 to have a depth of only up to ten millimeters. Therefore, the rejection of claim 44 as anticipated by Thorn is improper and should be withdrawn. Allowance of claim 44 is respectfully requested.

Claim 45 depends from claim 44 and further recites that each of the plurality of plenums is cylindrical and has a diameter of up to 1.4 millimeters. Thorn also fails to disclose this feature of claim 45. Furthermore, one of ordinary skill in the art, given the disclosure of Thorn, would not find the propellant chambers of the gas generating cartridges 12 to have a diameter of only up to 1.4 millimeters. Therefore, the rejection of claim 45 as anticipated by Thorn is improper and should be withdrawn. Allowance of claim 45 is respectfully requested.

In view of the foregoing, it is respectfully submitted that the above-identified patent application is in condition for allowance, and allowance of the above-identified patent application is respectfully requested.

Please charge any deficiency or credit any overpayment in  
the fees for this amendment to our Deposit Account  
No. 20-0090.

Respectfully submitted,



Daniel J. Whitman  
Reg. No. 43,987

TAROLLI, SUNDHEIM, COVELL,  
& TUMMINO L.L.P.  
526 Superior Avenue, Suite 1111  
Cleveland, Ohio 44114-1400  
Phone: (216) 621-2234  
Fax: (216) 621-4072  
Customer No.: 26,294